

**PATENT COOPERATION TREATY**  
**PCT**

**INTERNATIONAL SEARCH REPORT**

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>230183PCX335</b>	<b>FOR FURTHER ACTION</b>	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. <b>PCT/NZ2004/000227</b>	International filing date ( <i>day/month/year</i> ) <b>22 September 2004</b>	(Earliest) Priority Date ( <i>day/month/year</i> ) <b>22 September 2003</b>
Applicant <b>ARMORFLEX LIMITED et al</b>		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of **7** sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the report**

- a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☐ Certain claims were found unsearchable (See Box No. II).

3. ☒ Unity of invention is lacking (See Box No. III).

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☐ the text is approved as submitted by the applicant.

☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

- a. the figure of the drawings to be published with the abstract is Figure No. **1a**

☒ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

- b. ☐ none of the figures is to be published with the abstract.

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/NZ2004/000227

**Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

**Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

1. The impact head as claimed in claims 1-8 and included in claims 9-11, claim 17, and method claim 20. These claims include cable routing means configured to form a tortuous path through which a cable can be threaded, this arrangement being considered a first "special technical feature" during an impact.

[continued in Supplemental Box]

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☒ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

**Box No. IV Text of the Abstract (Continuation of item 5 of the first sheet)**

An impact head for a road guardrail (1) including cable routing means (2) adapted to form a convoluted path through which a cable can be threaded. The convoluted path that the cables (15) must follow through the impact head of the invention restricts movement of the cable (15) through the head, thereby providing sufficient friction to slow down the movement of the impact head during a vehicle impact. Also disclosed is a method of constructing a guardrail including the steps of slidably interconnecting a plurality of rails and attaching them to posts, positioning the impact head as claimed at one end of the slidably interconnected rails, threading at least one cable through the impact head and anchoring the cable to the ground.

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/NZ2004/000227

**A. CLASSIFICATION OF SUBJECT MATTER**Int. Cl. <sup>7</sup>: E01F 15/02

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

AU: IPC E01F 15/00, 15/02, 15/04, 15/06

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPAT: E01F 15/IC and cable+ and (tortuous+ or twist+ or turn+)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 1996/029473 A1 (DAVIDSEN) 26 September 1996 See whole document	1
A	WO 1999/032728 A1 (AUTOSTRADA DEL BRENNERO S.P.A.) 1 July 1999 See whole document	1
A	WO 1998/044203 A1 (SICKING et al) 8 October 1998 See whole document	1
A	US 5967497 A (DENMAN et al) 19 October 1999 See whole document	1

☒ Further documents are listed in the continuation of Box C☒ See patent family annex

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|---|---|
| <p>* Special categories of cited documents:</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> | <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>"&amp;" document member of the same patent family</p> |
|---|---|

Date of the actual completion of the international search

22 November 2004

Date of mailing of the international search report

3 DEC 2004

Name and mailing address of the ISA/AU

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## INTERNATIONAL SEARCH REPORT

International application No.

PCT/NZ2004/000227

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	GB 2224528 A (BRITISH ROPES LIMITED) 9 May 1990 See whole document	1

**Supplemental Box**

(To be used when the space in any of Boxes I to VIII is not sufficient)

**Continuation of Box No: III**

2. A guardrail as claimed in claims 12-15, 18 and 19, including at least one cable provided along at least part of the length of a plurality of slidably-interconnected rails wherein each end of the cable is fixed in relation to the ground and an impact slider means substantially surrounds a first rail and includes a portion that gathers and retains rails during an impact. This arrangement is considered to comprise a second "special technical feature".

3. A frangible fastener as claimed in claim 16, including a head portion having a minimum cross-sectional diameter greater than the maximum cross-sectional diameter of a tail portion and a shank portion including a frangible zone having a minimum cross-sectional diameter smaller than the tail portion's maximum cross-sectional diameter. This arrangement is considered to comprise a third "special technical feature".

Although the impact head of claim 17 and the guardrail of claim 18 include the frangible fastener of claim 16, the three groups of claims considered as a whole do not share any of the identified special technical features, and therefore a technical relationship between the claims, as defined in Rule 13.2, does not exist. Accordingly, the international application does not relate to a single invention, or to a single inventive concept.

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/NZ2004/000227**

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member			
WO	1996/029473	AU	49399/96	DK	27795
WO	1999/032728	AU	20545/99	BR	9807715
		EP	0924347	EP	0968333
WO	1998/044203	AU	66787/98	CA	2285217
		NZ	337858	US	5775675
		US	6109597	EP	1015699
US	5967497	AU	97114/98	NO	985847
		NZ	332805		
GB	2224528	AU	44506/89	CA	2002442
		EP	0369659	DK	554089
		GB	2224528	HU	55456
		NZ	231326	IL	92204
		US	5039066	PT	92221
		ZA	8908455	TR	27232

Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.

**END OF ANNEX**